SINADSKIY, Yu.V.; BONDARTSEVA, M.A.

Diseases of trees and shrubs in tugai forests of the Syr Darya Valley. Bot.zhur. 45 no.3:423-429 Mr '60.
(MIRA 13:6)

1. Botanicheskiy institut im. V.L. Komarova Akademii nauk SSSR, Leningrad.
(Trees--Diseases and pests)
(Shrubs--Diseases and pests)
(South Kazakhstan Province--Fungi, Phytopathogenic)

BONDARTSEVA, M.A.

New rare species of Micromycetes from the southern coast of the Crimea. Bot. mat. Otd. spor. rast. 13:197-207 '60.
(MIRA 13:7)

(Crimea--Fungi, Phytopathogenic)

SINADSKIY, Yu.V., BONDARTSEVA, M.A.

Some pore fungi on deciduous plants in the flood plain of the Ural River. Bot. mat. Otd. spor. rast. 13:222-232 '60. (MIRA 13:7)

(Ural Valley--Basidiomycetes--Wood-Decaying fungi)
(Ural Valley--Basidiomycetes)
(Wood-decaying fungi)

BONDARTSEV, A.S.; BONDARTSEVA, M.A.

Change of the systematic position of the genus Aporpium. Bot. zhur. 45 no.11:1693-1695 N '60. (MIRA 13:11)

1. Botanicheskiy institut imeni V.L.Komarova Akademii nauk SSSR, Leningrad.

(Basidiomycetes)

BONDARTSEVA, M.A.

Critical review of latest classifications of the family Polyporaceae. Bot. zhur. 46 no.4:587-593 Ap '61. (MIRA 14:3)

1. Botanicheskiy institut im. V.L.Komarova Akademii nauk SSSR, Leningrad.

(Polyporaceae)

SINADSKIY, Yu.V.; BONDARTSEVA, M.A.

Bracket fungi of the "Krasnyi les" hunting grouds in Krasnodar Territory. Bot.zhur. 47 no.1:55-67 Ja '62. (MIRA 15:2)

1. Biologicheskoye otdeleniye AN SSSR, Moskva i Botanicheskiy institut imeni V.L.Komarova AN SSSR, Leningrad.
(Krasnodar Territory—Polyporaceae)

BONDARTSEVA, M. A.

Anatomic criterion in the ~~taxonomy~~ of Aphyllophorales. Bot. zhur. 48 no.3:362-372 Mr '63. (MIRA 16:4)

1. Botanicheskiy institut imeni V. L. Komarova AN SSSR, Leningrad.

(Fungi—Anatomy) (Hymenomycetes)

BONDARTSEV, A.S.; BONDARTSEVA, M.A.

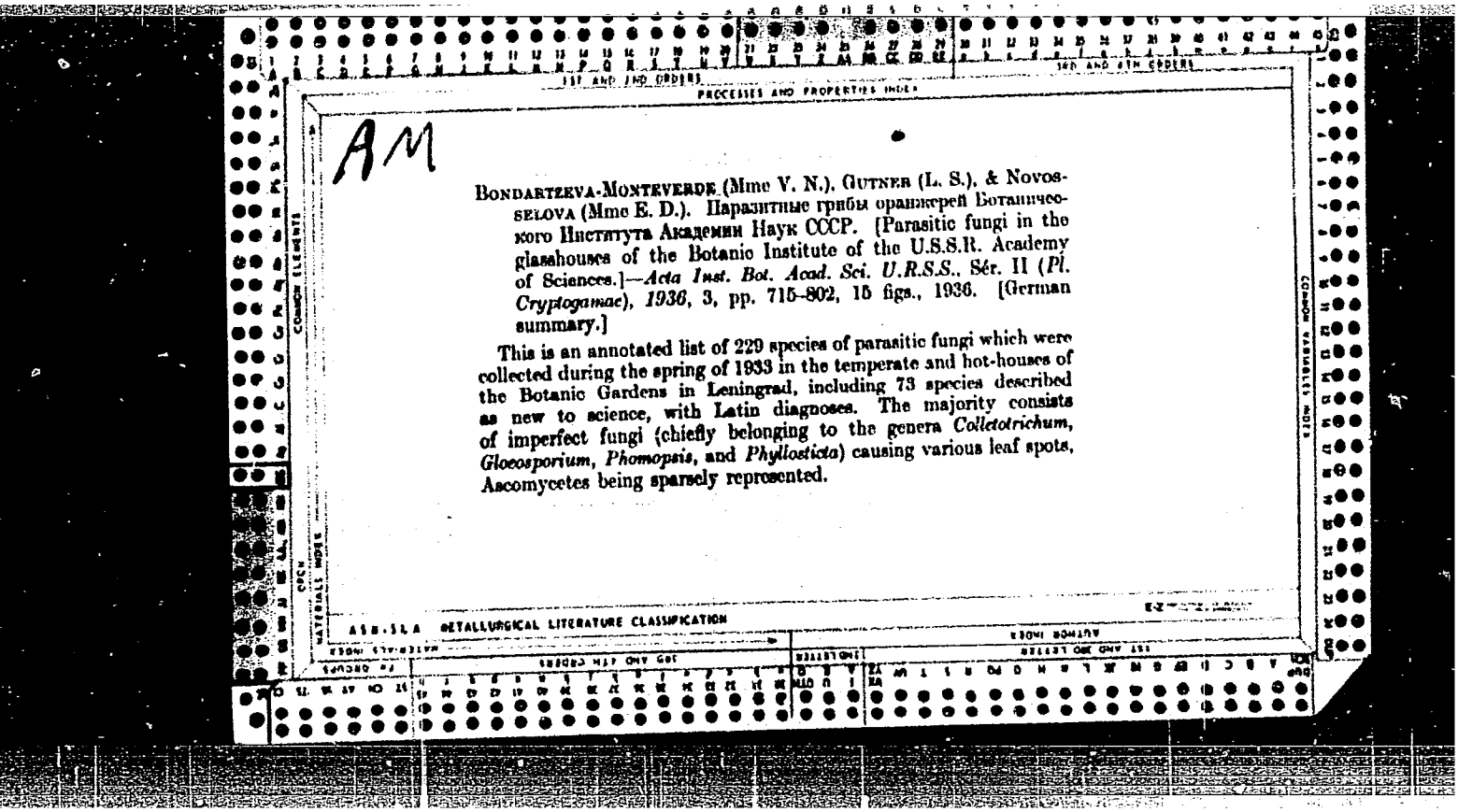
Albert Pilat; on his 60th birthday. Bot. zhur. 48 no.10:1549-1552 O '63. (MIRA 17:1)

1. Botanicheskiy institut imeni Komarova AN SSSR, Leningrad.

BONDARTSEVA-MONTEVERDE, V. N. and Vassilyevskiy, N. I.

Ascochytosis of the Pea and other Legumes, Bolozni Rastenii, Vestnik Otdela Fitopatalogii Glavnogo Botanicheskogo Sada SSSR, vol. 19, no. 1-2, 1930 pp, 8-11. 46h.8 Z6

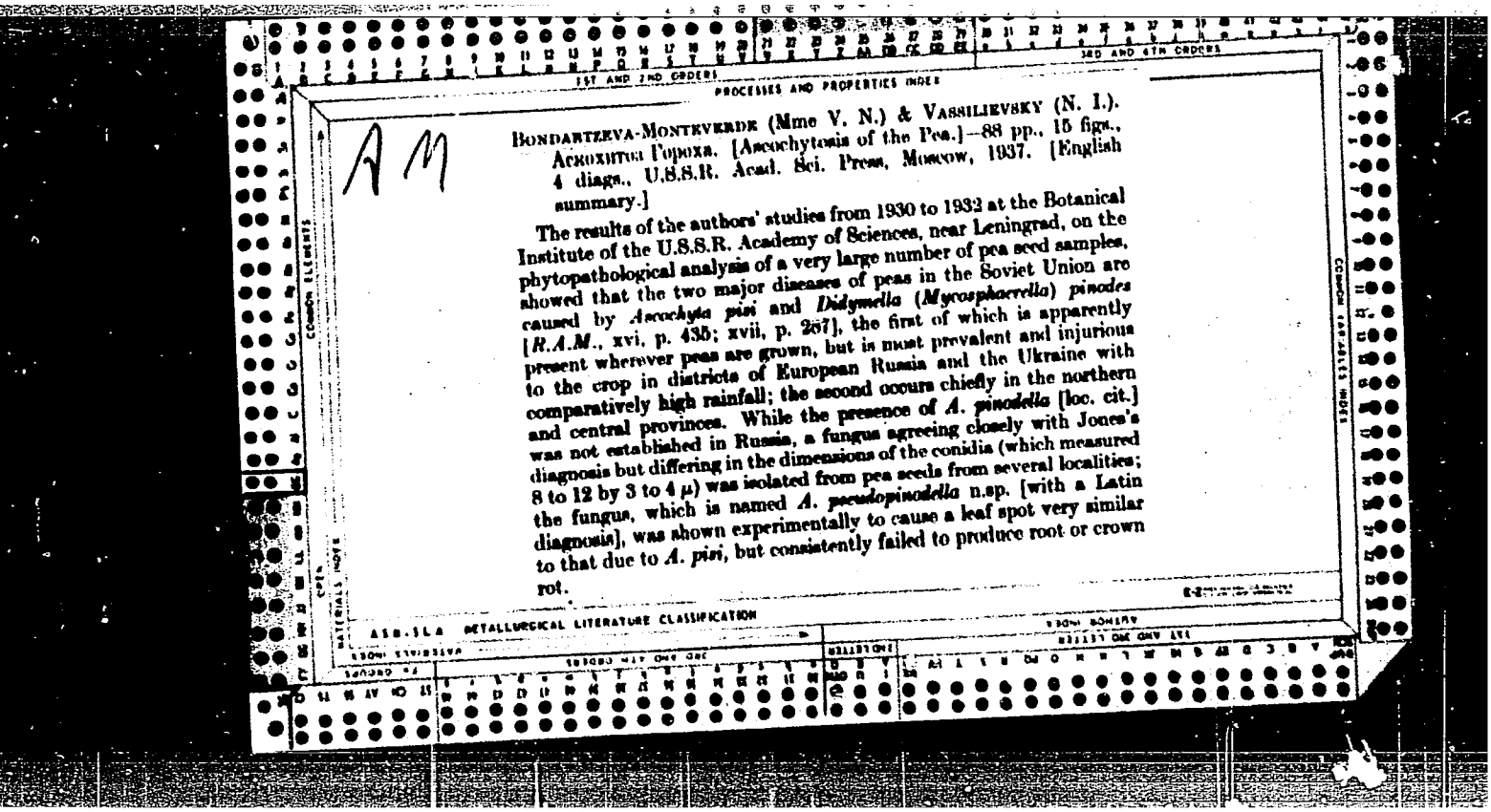
SO - SIRA SI 90-53, 15 December 1953



AM

BONDARTZEVA-MONTEVERDE (Mme V. N.), GUTNER (L. S.), & NOVOSSELOVA (Mme E. D.). Паразитные грибы оранжерей Ботанического Института Академии Наук СССР. [Parasitic fungi in the glasshouses of the Botanic Institute of the U.S.S.R. Academy of Sciences.]—*Acta Inst. Bot. Acad. Sci. U.R.S.S.*, Sér. II (*Pl. Cryptogamae*), *1936*, 3, pp. 715–802, 15 figs., 1936. [German summary.]

This is an annotated list of 229 species of parasitic fungi which were collected during the spring of 1933 in the temperate and hot-houses of the Botanic Gardens in Leningrad, including 73 species described as new to science, with Latin diagnoses. The majority consists of imperfect fungi (chiefly belonging to the genera *Colletotrichum*, *Gloeosporium*, *Phomopsis*, and *Phyllosticta*) causing various leaf spots, Ascomycetes being sparsely represented.



PROCESSES AND PROPERTIES INDEX

A M

BONDARTZEVA-MONTEVERDE (Mme V. N.) & VASSILIEVSKY (N. I.). Ascochytosis of the Pea.]—88 pp., 15 figs., 4 diags., U.S.S.R. Acad. Sci. Press, Moscow, 1937. [English summary.]

The results of the authors' studies from 1930 to 1932 at the Botanical Institute of the U.S.S.R. Academy of Sciences, near Leningrad, on the phytopathological analysis of a very large number of pea seed samples, showed that the two major diseases of peas in the Soviet Union are caused by *Ascochyta pisi* and *Didymella* (*Mycosphaerella*) *pinodes* [*R.A.M.*, xvi, p. 435; xvii, p. 267], the first of which is apparently present wherever peas are grown, but is most prevalent and injurious to the crop in districts of European Russia and the Ukraine with comparatively high rainfall; the second occurs chiefly in the northern and central provinces. While the presence of *A. pinodella* [loc. cit.] was not established in Russia, a fungus agreeing closely with Jones's diagnosis but differing in the dimensions of the conidia (which measured 8 to 12 by 3 to 4 μ) was isolated from pea seeds from several localities; the fungus, which is named *A. pseudopinodella* n.sp. [with a Latin diagnosis], was shown experimentally to cause a leaf spot very similar to that due to *A. pisi*, but consistently failed to produce root or crown rot.

A88.1LA METALLURGICAL LITERATURE CLASSIFICATION

A. pisi and *M. pinodes* were shown in cross-inoculation experiments involving 24 different species of Leguminosae to be weakly pathogenic to certain other species of the family besides the pea, for the most part only causing the appearance of isolated spots on a few leaves. Further studies indicated the existence of five forms of *A. pisi* and three forms of *M. pinodes*, differing from one another in cultural characters and also somewhat in their pathogenicity. In pea seeds *A. pisi* was found to retain its viability for at least six years, and *M. pinodes* for about five years.

The other fungi which were most frequently met with in the pea samples examined included three [unnamed] species of *Fusarium*, one of which was especially common and considerably lowered the germinability of the seed. An unidentified species of *Alternaria* was found fairly frequently inside pea seeds, especially from Siberia, but did not appear to affect their viability appreciably. Bacterial infection of the seed was fairly common, and among the moulds *Penicillium glaucum* was the most prevalent. Three samples were found to be heavily infected with *Moniliopsis aderholdi* [ibid., xvii, p. 183] which, in germination tests, invariably killed the affected seedlings.

BONDARTZEVA-MONTEVERDE (Mme V. N.) & VASSILJEVSKY (N. I.). К биологии и морфологии некоторых видов **Ascochyta** на бобовых. [A contribution to the biology and morphology of some species of *Ascochyta* on Leguminosae.] —*Acta Inst. bot. Acad. Sci. U.R.S.S., 1938*, Ser. II (Pl. Crypt.), pp. 345-376, 20 figs., 1940. [English summary.]

Artificial infection experiments carried out from 1930 to 1932 at the Botanical Institute of the U.S.S.R. Academy of Sciences, showed that among the species of *Ascochyta* parasitic on Leguminosae there are some specialized on one host, and others capable of infecting many. To the former group belong *A. fabae* on broad beans (*Vicia faba*), *A. pisi* on peas [*R.A.M.*, xvii, p. 427], *A. rabiei* on *Cicer arietinum* [ibid., xviii, p. 86], *A. lentis* n.sp. [with a Latin diagnosis] on lentils, and *A. onobrychidis* n.sp. [with a Latin diagnosis] on sainfoin (*Onobrychis sativa*), all of which produce severe infection only on their respective common hosts and merely traces of infection on other plants. Furthermore, all these species are separated on the basis of their behaviour in pure culture.

A. fabae was more ready to form aerial mycelium in the first transfers, showed olive-green patches in the mycelium, and formed noticeably larger brownish pycnidia and larger conidia than *A. pisi*, the average size of the conidia on oat agar being 18·6 by 4·5 μ in *A. fabae* and 13·3 by 4·1 μ in *A. pisi*. The growth of *A. rabiei* on oat agar differed entirely from that of the other species of this genus, its pycnidia emitting a characteristic pink slime, which in some places coalesced to form a continuous pink mass. *A. lentis* is described as causing small, round, whitish lesions, 0·1 to 0·4 cm. in width, with an indefinite or narrow, brownish margin on the leaves and fruits of lentils, involving considerable losses to the crop, especially in the Ukraine. The pycnidia are generally gregarious, immersed, depressed-globose, 175 to 200 μ in diameter, with a minute, round ostiole, and with a yellowish-brown pseudoparenchymatous context. The conidia are cylindrical, straight or rarely curved, rounded at the ends, with a median septum, 11·5 to 19·5 by 3·5 to 5·8 μ. On oat agar the fungus produced numerous dark pycnidia with dark brick-coloured exudate, forming abundant slightly pinkish aerial mycelium only after repeated transfers, and, as a further difference from *A. pisi*, coloured the substratum dark purple. In culture the conidia measured 13·5 to 17 by 4 to 5·7 (average 14·9 by 4·7) μ.

A. onobrychidis, collected in the Ukraine and the Caucasus, is stated to attack mainly the stems, on which it produces elongated, ochraceous or brownish lesions with a narrow, dark margin; on the leaves the spots are usually small, more or less rounded, ochraceous, with a narrow, dark brown margin. The pycnidia on the stems may be scattered, densely aggregated, or even sometimes coalescent, depressed-globose, dark brown to black, and slightly prominent, 115 to 120 μ in diameter, with an ostiole 20 to 30 μ in diameter; on the leaves they are light brown, sparse, immersed, and measure 115 to 250 μ in diameter. The conidia are cylindrical, with rounded ends, usually uni- but sometimes bi- or triseptate, not at all or slightly constricted, 13·5 to 20 by 4·5 to 6 (average 17 by 5·2) μ. In pure culture the fungus on the whole resembled *A. pisi*, but was more ready to form aerial mycelium and produced noticeably larger pycnidia, the conidia on oat agar measuring on an average 15·4 by 4·9 μ. *A. orobi* Sacc. var. *onobrychidis* Prill. & Delacr. is cited as a synonym.

The plurivorous group was represented by *A. phaseolorum*, which produced only slight infection both on its common host, beans (*Phaseolus vulgaris*), and on a number of other leguminous plants as well as *Lapsana communis*, belonging to the Compositae; *A. medicaginis* Fuck. [ibid., xviii, p. 320], thought to be a synonym of *A. imperfecta* [ibid., xvii, p. 13], to which several species of *Medicago* were susceptible; a species of *Ascochyta* on *Orobus vernus* (not yet named pending further studies) which also infects clover, although both only slightly; and probably *A. sojaecola* [ibid., xi, p. 88]. An intermediate position with regard to host specialization was occupied by *Didymella* [*Mycosphaerella*] *pinodes* with its conidial stage *A. pinodes*), which infected a number of leguminous plants slightly, but peas more severely than does *A. pisi*, the latter also undergoing a longer incubation period in the host. The descriptions of all species studied are illustrated by drawings of the spores.

R j A.M

BONDARTZEV (A. S.) & BONDARTZEVA-MONTEVERDE (Mme V. N.). О черной парше—**Rhizoctonia solani Kühn** на Картофеле и связи с современными методами его разведения. [Concerning black scurf and stem canker—*Rhizoctonia solani* Kühn—in relation to contemporary methods of Potato cultivation.]—*Volume of Scientific Works, Leningrad, 1941–1943, U.S.S.R. Acad. Sci.*, pp. 383–392, 6 figs., 1946.

In 1943, during examinations of potato sprouts on State farms in the neighbourhood of Leningrad in connexion with a new cultivation method in which minimum numbers of potato tubers are used, many were found to be infected with black scurf and stem canker (*Rhizoctonia [Corticium] solani*) [*R.A.M.*, xviii, p. 611 and next abstract]. The greatest damage was observed during the sprouting period. Plants raised from tubers in glasshouses and hot-beds suffered 10 to 15 per cent. loss and main crops from 45 to 68 per cent. Late plantings suffered 23 per cent. infection and early plantings up to 46 per cent., 10 to 31 per cent. showing severe infection. The variety Berlichingen was heavily attacked (36 per cent.). The authors stress the importance of further intensive investigations of this disease in U.S.S.R.

R 9 A.M

BONDARTZEVA-MONTEVERDE (Mme V. N.). Некоторые экспериментальные данные о влиянии Rhizoctonia solani Kühn на урожай Картофеля. [Some experiments on the influence of *Rhizoctonia solani* Kühn on the Potato crop.]—*Volume of Scientific Works, Leningrad, 1941–1943, U.S.S.R. Acad. Sci.*, pp. 393–395, 1946.

In the experiments described in this study, conducted in the Leningrad district, potato tubers and cuttings infected with *Corticium solani* [*R.A.M.*, xxvi, pp. 27, 77] were planted in light, sandy, slightly alkaline soil (after clover), fertilized with ash and superphosphate. The effect of *C. solani* on each sprout was examined after 24 to 25 days. The crop was harvested between 15th and 18th September. From the results it is concluded that sclerotia of *C. solani* on infected tubers are responsible for the destruction of potato sprouts. The degree of infection depends on the temperature and humidity of the soil, its composition, and the potato variety. The date of planting influences the degree and severity of infection, early plantings showing a higher percentage of the disease. Very shallow planting of the tubers decreased the number of infected plants, but light, dry soil gave low yields. Heavy, moist soil is recommended. The basidial state of the fungus was observed on isolated plants. Sclerotia were found only on seven plants.

1. BONDARTSEV, A.S.; BONDARTSEVA-MONTEVERDE, V.N.

2. USSR (600)

4. Fungi

7. Species of the genus Ascochyta on Astragalus, A.S. Bondartsev, V.N. Bondartseva-Monteverde, Bot.mat.Otd.spor.rast. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, APRIL 1953, Uncl.

ANDRIYEVSKIY, Ye.A.; BONDARUK, B.L.

Ferroresonant voltage stabilizer as a reference voltage source with operating temperature from 20 to 250° C. Vop. pered. inform. 2:159-161 '63. (MIRA 16:12)

ACCESSION NR: AT4043980 S/3106/64/000/008/0086/0089

AUTHOR: Andriyevskiy, Ye. A., Bondaruk, B. L.

TITLE: Residual effects of temperature changes in permalloy alloys

SOURCE: AN UkrSSR. Fiziko-mekhanicheskiy institut. Avtomaticheskiy kontrol' i izmeritel'naya tekhnika, no. 8, 1964, 86-89

TOPIC TAGS: permalloy, alloy magnetic property, alloy inductance, alloy coercive force, cyclic heating, thermal stress

ABSTRACT: When alloys of the permalloy type are subjected to cyclic heating, two types of change in magnetic properties may be produced, depending on the temperature and rate of cooling: reversible changes which disappear after heating is discontinued, and permanent or residual changes. In the present paper, the authors investigate the changes in saturation inductance, residual inductance and coercive force produced in alloys 79NMA, 77NMD, 34NKMP, 35NKKhSP and 37NKDP by cyclic heating and cooling to temperatures of to 400C. In each case, the alloy was kept at the selected temperature for 1 hr. and then cooled at a rate of 200-250C/hr. Measurements were made by a ballistic method. The results showed that no residual changes in magnetic properties appear at temperatures up

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ACCESSION NR: AT4043980

to 350C. At 400C, as shown in Fig. 1 of the Enclosure, the magnitude of the residual changes depends on the number of cycles. In general, the residual changes are more marked in alloys such as 34NKMP, 35NKKhSP and 37NKDP, with a rectangular dynamic loop, than in 79NMA and 77NMD with the usual type of loop. Alloy 37NKDP showed a tendency to change the initial shape and the loop. Orig. art. has: 4 figures.

ASSOCIATION: Fiziko-mekhanicheskiy institut AN UkrSSR (Institute of Physics and Mechanics, AN UkrSSR)

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SUB CODE: MM NO REF SOV: 000 OTHER: 000

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ACCESSION NR: AT4043980 ENCLOSURE: 01

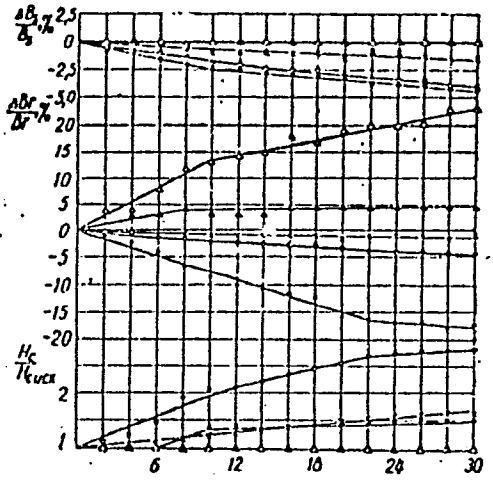

Fig. 1. Changes in saturation inductance, residual inductance and coercive force in relation to the number of 20-400-20C temperature cycles. ΔΔΔ - 79NMA; ▲▲▲ 77NMD; XXX - 34NKMP; 000 - 35NKKhSP; ♦♦♦ - 37NKDP.

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L 56646-65 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b) MJW/JD

ACCESSION NR: AT5014633 UR/0000/65/000/000/0189/0193

681.142.324

36
29

AUTHOR: Andriyevskiy, Ye. A.; Bondaruk, B.L.

TITLE: Influence of temperatures between -200 and +500C on the initial properties of Permalloys

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki i vychislitel'noy tekhniki, 9th, Yerevan, 1963. Magnitnyye analogovyye elementy (Magnetic analog elements); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1965, 189-193

TOPIC TAGS: Permalloy temperature stability, temperature-induced magnetic change, Permalloy magnetic property, residual magnetism

ABSTRACT: In their earlier work, the authors neglected to investigate the residual temperature influences in Permalloys (Sb. Avtomaticheskiy kontrol' i izmeritel'naya tekhnika, no. 7, Kiev, Izd-vo AN UkrSSR, 1963). The present study therefore deals specifically with the irreversible changes in magnetic properties of Permalloys and establishes temperature limits beyond which residual changes appear. It also establishes the dependence of these changes on the temperature and the number of cycles, and investigates possible ways for the stabilization of various alloys against the effects of

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temperature cycles. Comprehensive data refer to the behavior, within the -200 to +500C temperature limits, of the Permalloys 79NMA, 77NMD, 34NKMP, 35NKKhSP, 37NKDP, and 68NMP prepared by standard thermal processing in the form of toroidal samples. Orig. art. has: 6 figures.

ASSOCIATION: none

SUBMITTED: 28Dec64 ENCL: 00 SUB CODE: MM, EM

NO REF SOV: 001 OTHER: 001

Nickel Alloy

Card 2/2

L 08428-67 EWT(m)/EWP(w)/EWP(t)/ETI IJP(c) JD/GD
ACC NR: AT6034427 SOURCE CODE: UR/0000/66/000/000/0085/0092

53
52
B+1

AUTHOR: Bondaruk, B. L. (L'vov)

ORG: none

TITLE: Temperature-induced changes in Permalloys

SOURCE: AN UkrSSR. Termostoykiye radiotelemetricheskiye sistemy (Heat resistant radiotelemetering systems). Kiev, Naukova dumka, 1966, 85-92

TOPIC TAGS: permalloy, magnetic alloy, magnetic hysteresis, magnetic permeability

ABSTRACT: High temperatures may permanently damage square-loop magnetic materials. The author has applied magnetic fields during the heating of core samples, and has found that under some conditions their magnetic properties are less degraded, or even improved, with heat. Sample batches of type 37NKDP Permalloy were placed in steady-state and alternating fields of 40 amp/m and 300 amp/m while undergoing heat cycling. One control batch was cycled without any external field. The program included ten one-hour cycles at 400, 450, and 500C, with one-hour cooling periods between each cycle. Fig. 1 shows the effect on remanence in the test samples. Other results are described where annealing temperatures up to 700C were applied, after which remanence, saturation induction,

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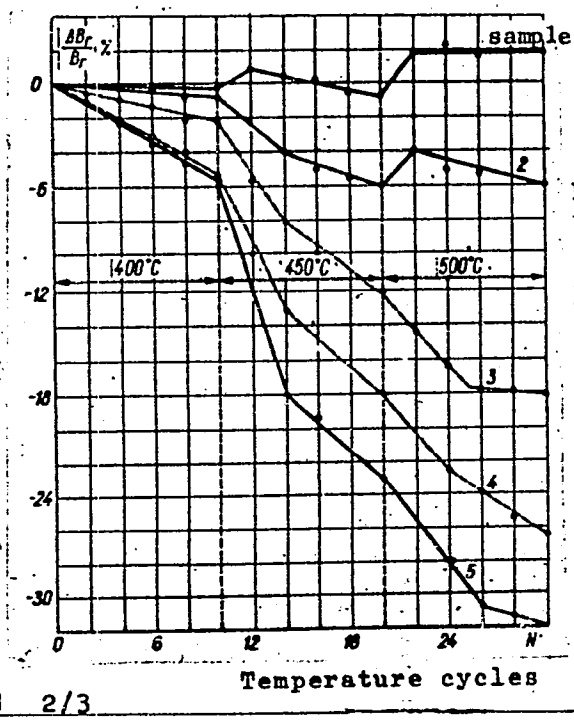

Fig. 1. Remanence change with temperature

1 - Constant field, 300 amp/m;
2 - variable field, 300 amp/m;
3 - constant field, 40 amp/m;
4 - variable field, 40 amp/m;
5 - control group (no field).

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ACC NR: AT6034427

and coercive force were found in some cases to have improved markedly from pre-test values. Remanence in some samples increased by 50% after temperature cycling. After the cycling program, core magnetic properties were quite stable at temperatures up to 500C. Orig. art. has: 4 figures.

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ATD PRESS: 5103

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Card 3/3

BONDARUK, G.P.

Spelling of geographical names. Izv. AN SSSR. Ser. geog. no.5: 153-155 S-O '63. (MIRA 16:10)

BONDARUK, G.[illegible], red.; MURAYEV, [illegible], red.; [illegible], V.A., red.; TSYBUL'SKIY, V.V., red.; DAVYDOVA, G.A., red.

[Toponymy of the East, new research] Toponimika Vostoka; novye issledovaniia. Moskva, Nauka, 1966. 227 p. [illegible]

1. Akademiya nauk SSSR, Institut narodov Azii.

BONDAREV, G. I.

29100

Vybor Printsipa Sortirovochnogo Apparata Dlya Seledki, Melkoy Sel'Di I Kil'ki. Ryb, Khoz-vo, 1949, No 9, S. 23-25

SO: LETOPIS' No. 34

SMIRNOVA, L.A.;SERGEYEVA, T.I.;MEN',M.L.;BONDARYUK, A.S.;KARARLITSKAYA, Ye.A.; DUBOVIK, V.Ye.;YAROSH, A.P.;ZELENSKAYA, G.Ye.

In memory of T. M. Stepanov. Khirurgiia, Moskva no.4:91-92 Apr 1953. (CIML 24:4)

1. Obituary.

BONDARYUK, A.S.

SMIRNOVA, L.A., dotsent; BONDARYUK, A.S.

Treating spinal injuries and the ability to work. Ortop.travm. i protez. 17 no.6:104 N-D '56. (MLRA 10:2)

1. Iz kafedry gospital'noy khirurgii (zaveduyushchiy - zasluzhennyy deyatel' nauki professor T.Ye. Gnilorybov) Dnepropetrovskogo meditsinskogo instituta (direktor - dotsent D.P.Chukhriyenko) i oblastnoy bol'nitsy (glavnyy vrach - I.A.Lobanov)
(SPINE--WOUNDS AND INJURIES)

IL'YASHENKO, Sergey Mikhaylovich [deceased]; TALANTOV, Aleksey Vasil'yevich; BOLGARSKIY, A.V., doktor tekhn. nauk, retsenzent; BESPALOV, I.V., kand. tekhn. nauk, retsenzent; KLYACHKO, L.A., kand. tekhn.nauk, retsenzent; CHUMACHENKO, B.N., inzh., red.; BONDARYUK, M.M., doktor tekhn. nauk, prof., red.; POPOV, A.V., red.

[Theory and design of direct-flow combustion chambers] Teoriia i raschet priamotochnykh kamer sgoraniia. Moskva, Mashinostroenie, 1964. 305 p. (MIRA 17:12)

Bondaryuk, Mikhail Makarovich and Il'yashenko, Sergey Mikhaylovich

Pryamotochnyye vozdushno-reaktivnyye dvigateli (Ramjet Engines) Moscow, Oborongiz, 1958. 391 p. 10,000 copies printed.

Ed. of Publishing House: Petrova, I. A.; Tech. Ed.: Rozhin, V. P.; Reviewer: Shchetinkov, Ye. S., Doctor of Technical Sciences, Professor; Ed.: Makarov, B. V., Engineer; Managing Ed.: Sokolov, A. I.

PURPOSE: This book is intended for engineers, specialists in aircraft-engine design and for students of aviation vuzes who are acquainted with basic thermodynamics and gas dynamics.

COVERAGE: The authors state that this book is the first attempt at a generalized compilation of information indispensable for understanding the physical processes of ramjet engines (hereafter abbreviated RJE) and also for analysis of their gas dynamics and thrust. Source materials for this book included monographs and periodical articles in Soviet and foreign technical publications, and also some research work of the authors.

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Information is given on the theory, characteristics and design of subsonic and supersonic RJE's. The authors analyze the theory of RJE's and of basic engine components such as diffusors, combustion chambers and jet nozzles. They consider both molecular and nuclear propellants. In cases where no information could be found on certain parameters, for instance the coefficients of heat transfer in the combustion chamber or local internal drag in these chambers, the authors give only a qualitative analysis of the problem. Only 33 percent of the sources used were Soviet. In the last four chapters, "Subsonic RJE", "Supersonic RJE", "Atomic RJE" and "Prospects for RJE Development", only 13 percent of the cited references are Soviet. The authors mention Soviet scientists B. S. Stechkin and N. A. Merkulov, who designed, built and tested a subsonic RJE in 1939.

In Chapter I, on classification and uses of jet engines, the authors divide reaction engines into two categories, rocket engines and air-breathing jet engines. Several comparative graphs, taken from Marquardt's "Future of Ramjet Engines," American Aviation, 1954, show various engine parameters such as specific thrust per weight unit versus M, specific fuel consumption, and flight distance. Photos are taken mainly from U. S. sources. There are 19 references, of which 11 are Soviet (including 6 translations), 6 English and 2 French.

Card 2/17

Chapter II, Fundamentals of Gas Dynamics," reviews the general laws of gas dynamics, and describes various phenomena of a supersonic flow. There are 11 references, all Soviet (including 3 translations).

In Chapter III, on ideal RJE's, the authors define ideal engines as engines in which the dissipation of kinetic energy and thermic losses equal zero. The authors state that on the basis of this idealization rather simple equations are obtained and the analysis of the RJE thrust parameters is made possible. Ideal values represent optimum limits with which parameters of real engines may be compared. There are 8 references, of which 3 are Soviet, 2 English, 2 French and 1 German.

Chapter IV discusses diffusers. Subsonic ($M < 1$), near-sonic ($M = 1$-2), and supersonic ($M > 2$), diffusers are distinctly different. The work of real diffusers is characterized by losses due to friction and to shock phenomena. The authors describe various aspects of diffusers and analyze their behaviour in a supersonic flow. Special consideration is given to multiple-shock diffusuers. Their performance is analyzed in design and off-design operating conditions. There are 6 references, 2 of which are Soviet, 2 English, 1 French, and 1 German.

In Chapter V, "Jet Nozzles," the authors establish general equations of flow through nozzles, describe subsonic and supersonic nozzles, analyze energy

losses and give the equation of the impulse of gases and of the coefficient of losses of the impulse. They describe nozzle performance in off-design operating conditions. They also describe variable-area nozzles and give the principle for determining their profile and design. There are 14 references, of which 8 are Soviet (including 1 translation) and 6 English.

Chapter VI, "Basic Information on Molecular Fuels Used in RJE's and Their Combustion," describes characteristics which RJE fuels should have and gives basic data on the combustion of the air-fuel mixture. There are 30 references of which 14 are Soviet (including 5 translations) and 16 English.

In Chapter VII, "Mixture Formation," the authors describe special features of the fuel-air mixing process in RJE's. They analyze direct-jet injectors and centrifugal (swirl) injectors, fuel atomization and influence on it of injector type and fuel characteristics. They also consider varporization of the atomized fuel and describe a method of experimental determination of local fuel concentrations. There are 25 references, of which 18 are Soviet (including 6 translations) and 7 English.

Chapter VIII, on combustion chambers, describes and gives a schematic diagram of test stands for RJE combustion chambers. The authors classify combustion chambers as subsonic and supersonic. Both kinds might be for single-range and multi-range operating conditions. From the point of view of the

combustion process, chambers may be subdivided into single-shell and double-shell types. Both kinds may be of a vortex or stable-flow type. The authors also mention electrical and compression ignition, jet-swirl and pneumatic injection, and progressive and instant mixing. There are 19 references, of which 9 are Soviet (including 3 translations) and 10 are English.

In Chapter IX, "Subsonic RJE's," the authors describe the essential features of a subsonic RJE, and define its efficiency (7 percent) on the basis of the maximum obtainable intake pressure in a subsonic flight (1.89 times the atmospheric pressure). They give a method of analysis of these engines by successive approximations, and a method of computation of thrust characteristics of a real engine. They describe the most economical operating conditions and the speed and altitude characteristics of subsonic RJE's. They also mention various applications of subsonic RJE's. There are 14 references, of which 4 are Soviet and 10 English.

Chapter X, concerns "Supersonic RJE's." With modern fuels or atomic power the speed of continuous flight will be limited by the heat resistance of materials. At speeds of $M > 6$, the temperature from friction is higher than the melting point of steels. At $M \approx 4$, the specific consumption of fuel of a supersonic RJE is lower and the efficiency higher (more than 40 percent) than for any other type of engine. Various applications of supersonic RJE's are

given as reported in the non-Soviet press. There are 30 references, of which 2 are Soviet, 21 English, 5 German, 1 Italian and 1 French.

Atomic RJE's are discussed in Chapter XI. The authors state that Atomic RJE's would use a controlled fission reaction of atomic nuclei in a reactor for heating the flow of air. In these engines the reactor would take the place of the combustion chambers of conventional RJE. Two kinds of heat exchange may take place: 1) direct heating, in which air would be heated by flowing through the reactor, and 2) indirect heating, where air would be heated by flowing through a radiator heated by an intermediate fluid circulating from the reactor. There are 10 references, of which 6 are Soviet (including 4 translations), 3 English and 1 French.

Chapter XII, "Prospects for RJE Development," contains conclusions reached by the authors in regard to velocities and altitudes, engine components, and nuclear, ion and other possible sources of energy for RJE's. They consider that further development of the RJE will be achieved by improvement of its elements, such as diffusers, combustion chambers and nozzles, and also by the use of new sources of energy. RJE characteristics are inferior to those of other types of jet engines in the speed range M = 0.8 to M = 2.5 and at present their application seems to be restricted to single-operation aircraft, such as guided missiles, and to some types of rotor-tip engines for helicopters. There is no

information available in the technical literature on Mach-3 turbojet engines. It seems, however, that the Mach-3 turbojet may compete with RJE's if lubrication problems at high temperatures are solved. According to computations, the optimum rate of precompression in a turbojet compressor approaches unity at Mach 4. This means that if speed increases sufficiently the turbojet engine changes into a RJE. Altitudes greater than 25 km. and $M > 3$ velocities are said to belong to RJE's and rockets. The pressure ratio of coefficient in fixed-area multi-shock diffusers decreases when the speed for which the diffuser was designed increases (if $M = 2.75$, $\sigma = 0.7$, then $M = 3.3$ $\sigma = 0.55$). Combustion chambers of a stabilizing type in which a turbulent combustion of two-phase mixtures takes place are described in open sources. Further development of combustion chambers may consist of 1) improvement of methods of preparation of the fuel mixture, 2) reduction of hydraulic resistance of the chamber with simultaneous increase in completeness of combustion by means of changing from stabilization on poorly streamlined bodies to other types of stabilization, 3) application of self-igniting fuels, 4) operation of combustion chambers at low internal air pressures, 5) simplification of combustion-chamber design by the adoption of self-ignition, 6) reduction of weight, length, and hydraulic resistance, 7) increase of thrust. Improvement may be achieved by the use of

variable-area nozzles. There is no possibility of improvement of fixed-area nozzles. Engines working in various operating conditions must be provided with variable-area nozzles. The large store of energy accumulated in the ionized gas of the ionosphere may eventually be utilized in RJE's by means of a catalyst or by other devices. The authors mention the Soviet scientist Ya. B. Zel'dovich, who works in this field. The authors consider nuclear reactors for RJE's an immediate problem, and radioactive isotopes are mentioned as a possible source of energy. Beta batteries using artificial radioactive isotopes and producing electrical energy directly by radioactive decomposition are also mentioned as a potential source of energy for RJE's. At the end of the book 5 graphs of gas-dynamic functions are given:

1. $\tau(\lambda) = 1 - \frac{k-1}{k+1}\lambda^2$

2. $\pi(\lambda) = [\tau(\lambda)]^{\frac{k}{k-1}}$

3. $\varepsilon(\lambda) = [\tau(\lambda)]^{\frac{k}{k-1}}$

4. $q(\lambda) = \lambda\varepsilon(\lambda) = \lambda\left(1 - \frac{k-1}{k+1}\lambda^2\right)^{\frac{1}{k-1}}$

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5. $z(\lambda) = \lambda + \frac{1}{\lambda}$

and 5 entropy diagrams of dissociated combustion products of kerosene. The authors mention the following scientists responsible for elaboration of the supersonic RJE theory: S. F. Abramovich, B. S. Stechkin, and Zhuyev. In other fields Ye. S. Shchetinkov, G. I. Petrov, E. P. Ukhov, and I. A. Merkulov are mentioned.

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TYURENKOVA, O.A.; BONDARYUK, V.V.

Possibility of regenerating a palladium polyvinyl alcohol catalyst.
Kin. i kat. 6 no.2:336-337 Mr-Ap '65. (MIRA 18:7)

1. Kurganskiy sel'skokhozyaystvennyy institut.

BONDER, F.

Mitogenetic radiations. Polski tygod. lek. 7 no. 21:681-686 26 May 1952. (CLML 22:5)

1. Of the Department of Biopathology of Cancer (Head--Prof. K. Dux, M. D.) of the Institute of Oncology Branch in Glivice (Director -- J. Swiecki, M. D.).

BONDER, Flora

Determination of small concentrations of estrogens in urine.
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1. Z Instytutu Onkologii, Oddzial w Gliwicach; dyrektor: dr med.
J.Swiecki, Zaklad Biologii Nowotworow; kierownik: prof. dr
Kazimierz Dux.
(URINE,
estrogens, determ. of small concentrations)
(ESTROGENS, in urine,
determ. of small concentrations)

BONDER, J.

Invariance of the differential system of the dynamics of real gases as considered in affine space-time without metrics; application of the Galilean principle. Archiw mech 16 no.2: 189-200 '64.

1. Department of Mechanics of Liquids and Gases, University, Warsaw.

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New and rare plants for the flora of the Western Rhodope and the valley of the Mesta River, the Gotse Delchev region. Izv Inst bot BAN no.8:225-230 '61.

BONDEV, Iv.

A contribution to the flora of the Northwestern Bulgaria.
Izv Inst bot BAN no.8:231-237 '61.

VELCHEV, Velcho; BONDEV, Ivan

A contribution to the study of the flora in the Struma River Valley. Izv Inst bot BAN 13:169-170 '64.

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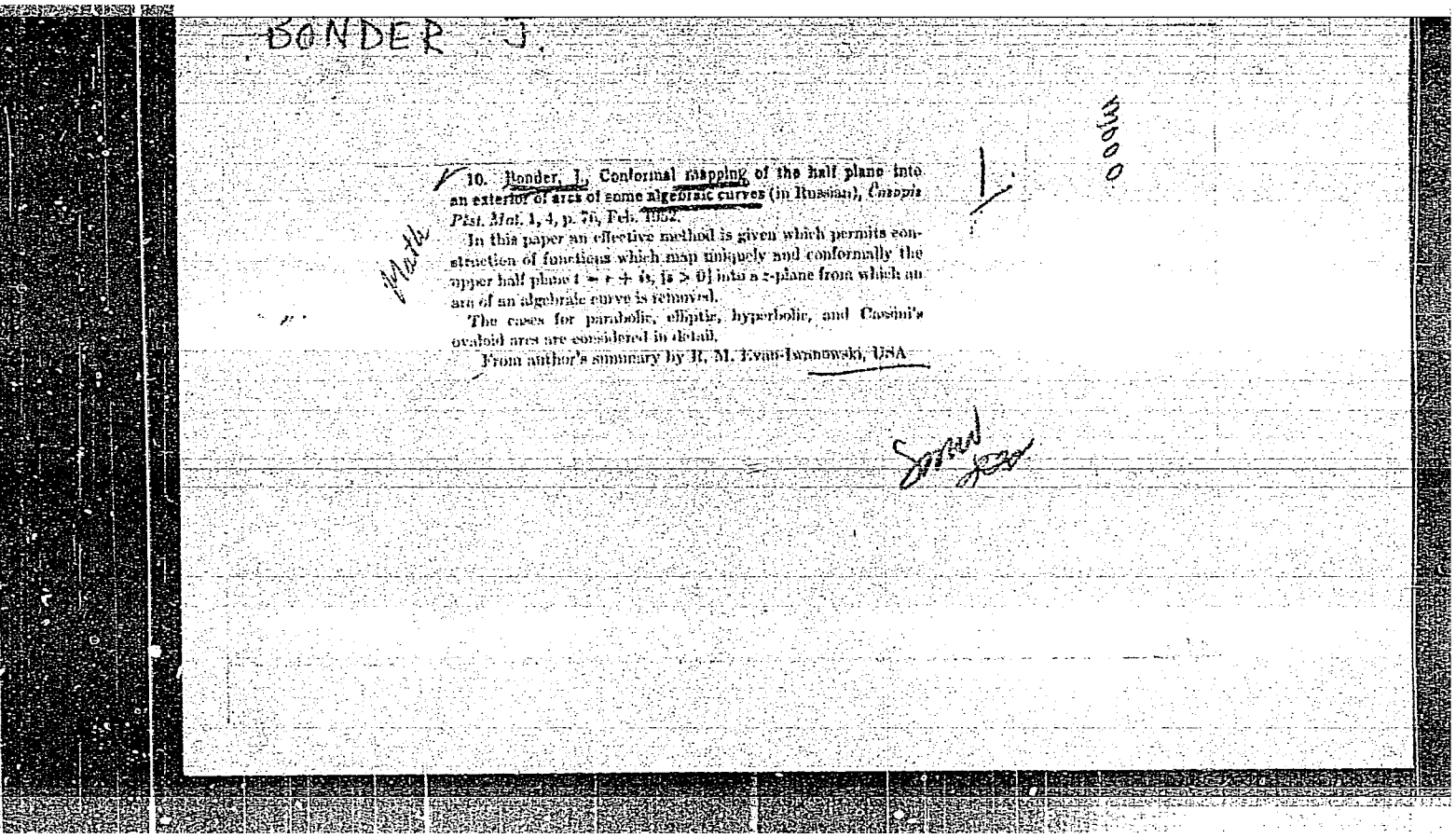
Floristic notes. Izv Inst bot BAN 7:315-316 '60.

BONDEV, Iv.

Vertical distribution of certain plants in the Rila Mountains.
Izv Inst bot BAN 7:165-171 '60.



BONDER J.

10. Bonder, J. Conformal mapping of the half plane into an exterior of arcs of some algebraic curves (in Russian), *Časopis Pěst. Mat.* 1, 4, p. 76, Feb. 1952.

In this paper an effective method is given which permits construction of functions which map uniquely and conformally the upper half plane $t = r + is$, $[s > 0]$ into a z-plane from which an arc of an algebraic curve is removed.

The cases for parabolic, elliptic, hyperbolic, and Cassini's ovaloid arcs are considered in detail.

From author's summary by H. M. Evan-Iwanowski, USA

Math

BONDER, J.

Date: 12Feb

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Bonder, Julian. Ondes simples dans les écoulements compressibles plans en régime non stationnaire. Arch. Mech. Stos. 8 (1956), 647–670.

Non-stationary, isentopic flows of a perfect gas in the plane are treated by seeking solutions of the equations of motion in the form of generalized simple waves. The sound speed a depends on a single variable (the density ρ or the pressure p). There are two relations between the sound speed and the flow components, $x=f_1(a)$ and $v=f_2(a)$, from which we have $du/da=2(k-1)^{-1}g(a)$ and $dv/da=2(k-1)^{-1}h(a)$. Hence, the equations of motion transform to the homogeneous linear system

$$\begin{aligned} a_t+(u+ag)a_x+(v+ah)a_y&=0,\\ ga_t+(ug+a)a_x+vga_y&=0,\\ ha_t+uha_x+(vh+a)a_y&=0. \end{aligned}$$

The condition for a non-trivial solution is $g^2+h^2=1$. The system finally reduces to

$$\begin{aligned} a_t+(u+ag)a_x+(v+ah)a_y&=0,\\ ha_x-ga_y&=0, \end{aligned}$$

for the single unknown function $a(t, x, y)$. This is a com-

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Bondi, Julian

plete differential system with the general integrals

$$F_1[a, x-(u+ag)t, y-(v+ah)t]=0,$$
$$F_2[a, t, gx+hy]=0,$$

and the simultaneous general integral

$$F[a, gx+hy-(a+ug+vh)t]=0.$$

The method is applied to a detailed analysis of the non-stationary flow generated by the displacement of a dihedral through a gas from an initial condition of rest. Finally, the classical one-dimensional gas flow of Riemann and the supersonic stationary plane flow of Prandtl-Meyer are recovered as direct and particular consequences of the theory. *C. D. Calsovas* (Livermore, Calif.).

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BONDER, Julian

Sur les fonctions réalisant les représentations conformes et biunivoques d'un demi-plan sur les extérieurs des arcs de certaines courbes algébriques. Czechoslovak Math. J. 1(76) (1951), 203-228 (1952) - Čehoslovack. Mat. Ž. 1 (76) (1951) 229-257 (1952).

Let α be a given simple analytic arc in the complex z-plane such that there exists an n-valued algebraic function $\zeta=\varphi(z)$ all of whose branches map α onto circular arcs. This paper is concerned with the investigation of the function $z=f(t)$ which maps the schlicht upper half-plane $\mathrm{Im}[t]>0$ onto the complement of α. The author proves that the Schwarzian derivative of the composite function $\varphi[f(t)]$ is again an n-valued algebraic function, say $F(t)$. If the Riemann surface on which $\varphi(z)$ is single-valued is of genus zero, the Riemann surface R of $F(t)$ is of genus one and $f(t)$ can be expressed in terms of elliptic functions if it is possible to determine the branch-points of R and the poles and residues of $F(t)$; in all other cases the genus of R is ≥ 3 and this, for all practical purposes, excludes an effective computation of $f(t)$. The author illustrates his theory by carrying out the computations in the cases in which α is an arc of a conic or of a Cassinian. The reviewer wishes to point out that all these mappings can be constructed much more simply by elementary direct methods (see the reviewer's "Conformal mapping" [McGraw-Hill, New York , 1952, Chap. VI, sec. 4; these Rev. 13, 640]).
Z. Nehari (ST. Louis, Mo.).

BONDER, J., DROBOT, S.

Critical remarks on the so called rational theory of turbulent flow and its applications. p. 85.
(ARCHIWUM HYDROTECHNIKI. Vol. 4, no. 1, 1957, Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol, 6, No. 9, Sept. 1957 Uncl.

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B/033/62/014/003/001/011
D251/D308

AUTHOR: Bonder, Julian (Warsaw)

TITLE: On a symmetric space-time form of the equations of gas dynamics and some of its applications

PERIODICAL: Archiwum Mechaniki Stosowanej, v. 14, no. 3-4, 1962, 289-310

TEXT: After considering the close connections of the basic problems of gas dynamics with general field theory, the author shows that, in the case of nonsteady flow, the classical system of differential equations is nonsymmetric, with respect to both independent and dependent variables. Hence it is impossible to apply the methods of tensor analysis and multidimensional geometry to such a system. Following the same general ideas as those used by E. Cartan, the author considers the nonstationary flow of an ideal compressible gas in a four-dimensional Euclidean space, which has a suitable positive definite metric, the problem being analyzed according to classical (nonrelativistic) mechanical principles. A rectilinear orthonormal coordinate system is introduced. For every point M of a

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curvilinear coordinate system a field of contravariant vectors $u^k(M)$ is introduced, such that the initial coordinate system of its components satisfies

$$u^k \overset{*}{=} \begin{cases} \rho \tilde{v}^c, & \text{if } k = c = 1, 2, 3 \\ \rho, & \text{if } k = 4 \end{cases} \qquad (2.8)$$

or

$$\tilde{\rho} \overset{df}{=} \rho/\rho_0, \quad \tilde{v}^c \overset{df}{=} v^c/v_0, \quad v_0 \overset{df}{=} l_0/t_0 \qquad (2.8')$$

where ρ_0 is an arbitrary constant. The system $\overset{*}{=}$ indicates that this equality is only valid with respect to the initial coordinates. A symmetric system of differential equations is derived. By applying the principles of tensor analysis the author finds an invariant form for the equations of gas dynamics:

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$$\left.\begin{aligned} &V_\nu u^\nu = 0 \\ &u^\nu V_\nu w_\mu + \partial_\mu \tilde{p} = \tilde{\rho}\partial_\mu \quad , \mu = 1, 2, 3, 4 \end{aligned}\right\} \qquad (3.7)$$

and a homogeneous quadratic form for the metric in a general curvilinear coordinate system. As an example of the application of these methods the author proves the following theorems: 1) In a simple isodynamic wave, the tangents at corresponding points of its two hodographs have orthogonal directions; 2) a simple isodynamic wave can only have irrotational motion; 3) isodynamic surfaces are hyperplanes. These theorems have not previously been obtained in so general a form or by such direct methods. The most important English-language reference reads: J. Bonder, Tensor Methods in the Theory of Non-Steady Three-dimensional Flow of the Double Wave Type, Appl. Math. Mech. (Pergamon Press, N. Y.), 6, 24, (1960).

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On a symmetric ...

P/033/62/014/003/001/011
D251/D308

ASSOCIATION: Division de mécanique de fluides IPFT, Académie Polonaise de Sciences (Division of Fluid Mechanics, IPFT, Polish Academy of Sciences)

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"On the tensor analysis of vortex motions of compressible media".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964.

BONDER, M.M.

[Safety engineering in the woodworking industry] Osnovy tekhniki bezopasnosti v derevoobrabatyvaiushchem proizvodstve. Moskva, Goslesbumizdat, 1954. 171 p. (MLRA 7:12D)

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AUTHOR: Bonder, Yu. (Warsaw)

TITLE: On the Tensor Method in the Theory of Instationary Three-Dimensional Flows of the Type of a "Double Wave"

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol. 24, No. 6, pp. 1079-1087

TEXT: The author considers an isentropic gas motion without shock waves in a Euclidean R_4 with the spatial coordinates $x^1 \equiv x$, $x^2 \equiv y$, $x^3 \equiv z$ and with $x^4 \equiv v^0 t$, where t is the time and v^0 has the dimension ms^{-1}. If $\vec{v}(v_1, v_2, v_3)$ is the ordinary velocity vector, then the vector $\vec{u}$ is introduced by

(1.1) $u_k = v_k$ for $k = 1,2,3$, $u_k = v^0 = \text{const}$ for $k = 4$.

Let H be the "complete enthalpy"

(1.5) $$H \equiv \frac{1}{2}(v)^2 + \int_0^{\varrho} \frac{c^2}{\varrho}\, d\varrho = \frac{1}{2}(v)^2 + \frac{c^2}{\varkappa - 1}$$

where c is the local velocity of sound, $\varkappa$ isentropic exponent and $(v)^2 = |v|^2 = v_i v^i$. If

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$$(2.1) \qquad w_k = \begin{cases} v_k & (k = 1,2,3) \\ -H/v^0 & (k = 4) \end{cases}$$

and the symmetric tensor

$$(2.8) \qquad T^{lm} \equiv c^2 \tau^{lm} - u^l u^m \qquad (l,m = 1,2,3,4)$$

are still introduced, where the tensor τ^{lm} is determined in the system (x^k) by

$$(2.7) \qquad \| \tau^{lm} \| = \begin{Vmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 \end{Vmatrix},$$

then the simple symmetric equation

$$(2.9) \qquad T^{lm} \frac{\partial w_m}{\partial x^l} = 0$$

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can be written for the most general potential flows of a compressible gas.

If one passes over from rectangular coordinates (x^k) to arbitrary curvilinear coordinates (x^λ), then instead of (2.9) it is put

$$T^{\lambda\mu} \nabla_\lambda w_{\mu\nu} = 0 \qquad (T^{\lambda\mu} \equiv c^2 \tau^{\lambda\mu} - u^\lambda u^\mu) \tag{3.1}$$

where

$$\nabla_\lambda w_{\mu\nu} = \frac{\partial w_{\mu\nu}}{\partial x^\lambda} - \Gamma^\nu_{\lambda\mu} w_{\nu} \tag{3.2}$$

and $\Gamma^\nu_{\lambda\mu}$ is the Christoffel symbol of second kind.

Each solution w of (2.9) or (3.1) can be interpreted as mapping of the motion space on a part of the four-dimensional Euclidean space V_4, the local vectors of which are determined by the vector field $\vec{w}$. The generalized hodograph is called V_4. Such a potential flow which is mapped onto a two-dimensional surface in the V_4 is denoted as a double wave (q=2); i. e. a double wave exists, if only q = 2 of the

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four components of $\vec{w}$ are independent. Therefore, the author must investigate the mappings

(5.1) $w_m = w_m(x^1, x^2, x^3, x^4) \qquad (m = 1,2,3,4),$

for which the rank of the matrix $\| \partial w_m / \partial x^k \|$ is equal to two. In the motion space $R_4 \{x^k\}$ there corresponds to each point of the hodograph a surface $\overline{J\Gamma}$ which is denoted as isodynamic. The author now proves that the isodynamic surfaces $\overline{J\Gamma}$ in the $R_4 \{x^k\}$ form a two parameter family of planes described by two linear equations of first order (theorem 1); that the isodynamic plane $\overline{J\Gamma}$ is orthogonal to the hodograph surface of the double wave in the corresponding point P (if $w^i \| x^i$) (theorem 2), and that on the hodograph surface of an arbitrary double wave along the characteristics there are satisfied the same conditions

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(7.11) $$ds \equiv \sqrt{(dv_1)^2 + (dv_2)^2 + (dv_3)^2} = \pm \frac{c}{\varrho} d\varrho = \pm \frac{2dc}{\varkappa - 1},$$

where ϱ is the density, as in the case of a simple wave (see (Ref.4)) (theorem 3).

There are 12 references: 8 Soviet, 2 German, 1 American and 1 Polish.

[Abstracter's note: (Ref.4) is a paper of the author in Actes du IX Congrès Intern. de Méc. Appl. t. III, 1956-57].

SUBMITTED: February 16, 1960

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Treatment of tuberculosis of the peripheral lymph nodes by subcutaneous procaine block. Probl. tuberk., Moskva No.6:73 Nov.-Dec. 1953. (CIML 25:5)

1. Of Chernovitsy Oblast Tuberculosis Dispensary.

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Material on the flora in the valley of the Struma River. Izv. Inst bot BAN 7:311-314 '60.

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Materials on the flora of Bulgaria. Izv Inst bot BAN 11 153-154 '63.

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Making the species composition of the genus Medicago L. more precise in Bulgaria. Izv Inst bot BAN 11 161-163 '63.

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Some new materials in the flora of the Southern Pirin Mountains, the Struma Valley, and the Slavyanka Mountains. Izv Inst bot BAN no. 9:177-179 '62.

BONDEV, IVAN ANDREEV.

Rastitelnata pokrivka na visokoplaninskiia raion na iburskoto bilo v iztochna Rila. Sofiia, Bulgarska akademiia na naukite, 1959. 141 p.

Sofiia, Bulgaria, Bulgarska

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Some new materials for the flora of Bulgaria regarding the valley of the Struma River, south of Krosnenska Klisura. Izv Inst bot BAN no.8:215-223 '61.

1. Chlen na Redaktsionnata kolegiia, "Iavestiia na Botanicheskiia institut" (for Vèlchev).

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The youth of space pilots. Fiz szemle 11 no.2: 35-41 F '61.

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A class of analytic functions representable by Cauchy A-integrals. Uch. zap. Orsk. gos. ped. inst. no.5:7-31 '63.
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BONDI, I.L.

Change of a variable in an A-integral. Uch. zap. MGPI no.188: 3-21 '62. (MIRA 16:9)

(Integrals)

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A-integrability in the narrow sense. Mat. sbor. 61 (103) no.2: 121-146 Je '63. (MIRA 16:10)

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Functions which are A-integrable almost everywhere. Dokl.AN SSSR 145 no.3:491-494 Jl '62. (MIRA 15:7)

1. Predstavleno akademikom P.S.Aleksandrovym.
(Functions)

BONDI, I.L.

Property of A-integrable functions. Usp.mat.nauk 18 no.1:145-150 Ja-F '63. (MIRA 16:2)
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PETROV, Georgiy L'vovich; BUROV, Nikolay Grigor'yevich; STETSYURA, A.I., inzh., retsenzent; GREBNEV, R.L., inzh., retsenzent; BILIBIN, P.F., inzh., retsenzent; BONDIN, I.N., inzh., red.; DUDUSOVA, G.A., red.izd-va; SHCHETININA, L.V., tekhn.red.

[Equipment and techniques of gas welding and cutting] Oborudovanie i tekhnologiia gazovoi svarki i rezki. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 263 p. (Gas welding and cutting) (MIRA 12:8)

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[A welder's handbook] Spravochnik svarshchika. Pod red. N.O. Okerbloma. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1959. 268 p. (MIRA 13:3)
(Welding)

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[Quality control of weld joints and structures] Kontrol' kachestva svarnykh soedinenii i konstruktsii. Moskva, Mashgiz, 1962. 158 p. (MIRA 15:6)

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Work practices of public industrial-safety inspectors. Khil.-kom. khoz. 11 no. 1:27-28 '61. (MIRA 14:2)

1. Tekhnicheskiy inspektor Kalininskogo oblprofsoveta, g. Kalinin.

(Industrial safety)

BONDIN, N.

Vigilant eye. Mest. prom. i khud. promys. 2 no.6:18-19 Je '61. (MIRA14:7)

1. Inspektor oblsovprofa, g. Kalinin.
(Trade unions)
(Factories--Safety measures)

MAKOV, A.; BONDIN, M.

Peat winning and....loading by a machine. Mest.prom.i khud. promys. 3 no.7:15 Jl '62. (MIRA 15:8)

1. Nachal'nik tekhnicheskogo otdela Kalininskogo oblastnogo upravleniya mestnoy promyshlennosti (for Makov). 2. Tekhnicheskiy inspektor Kalininskogo oblastnogo soveta professional'nykh soyuzov (for Bondin).
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BONDIN, M.A.; SINYAKOV, O.G., inzh.; SHIRKEVICH, N.S., inzh.; POPOVICH, M.V.; TATARNIKOV, M.N.; BALANDIN, A.A., inzh.; KHOLODKOV, N.Ye.; KOLEVATYKH, S.F., inzh.

Exchange of practices by the enterprises of economic councils. Torf. prom. 39 no.6:28-35 '62. (MIRA 16:7)

1. Kalininskiy sovet narodnogo khozyaystva (for Bondin). 2. 2. Torfopredpriyatiye Vasilevichi II (for Sinyakov, Shirkevich, Balandin, Kholodkov). 3. Nachal'nik konstruktorskogo byuro Tesovskogo transportnogo upravleniya (for Popovich). 4. Starshiy inzh. konstruktorskogo byuro Tesovskogo transportnogo upravleniya (for Tatarnikov). 5. Yaroslavskoye torfopredpriyatiye Yaroslavskogo narodnogo khozyaystva (for Kolevatykh).
(Peat machinery—Technological innovations)

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2. USSR (600)

4. Peat Industry

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Two-channel optimalizing controller using transistors and magnetic-core elements. Trudy MEI no.50:5-24 '63. (MIRA 17:12)

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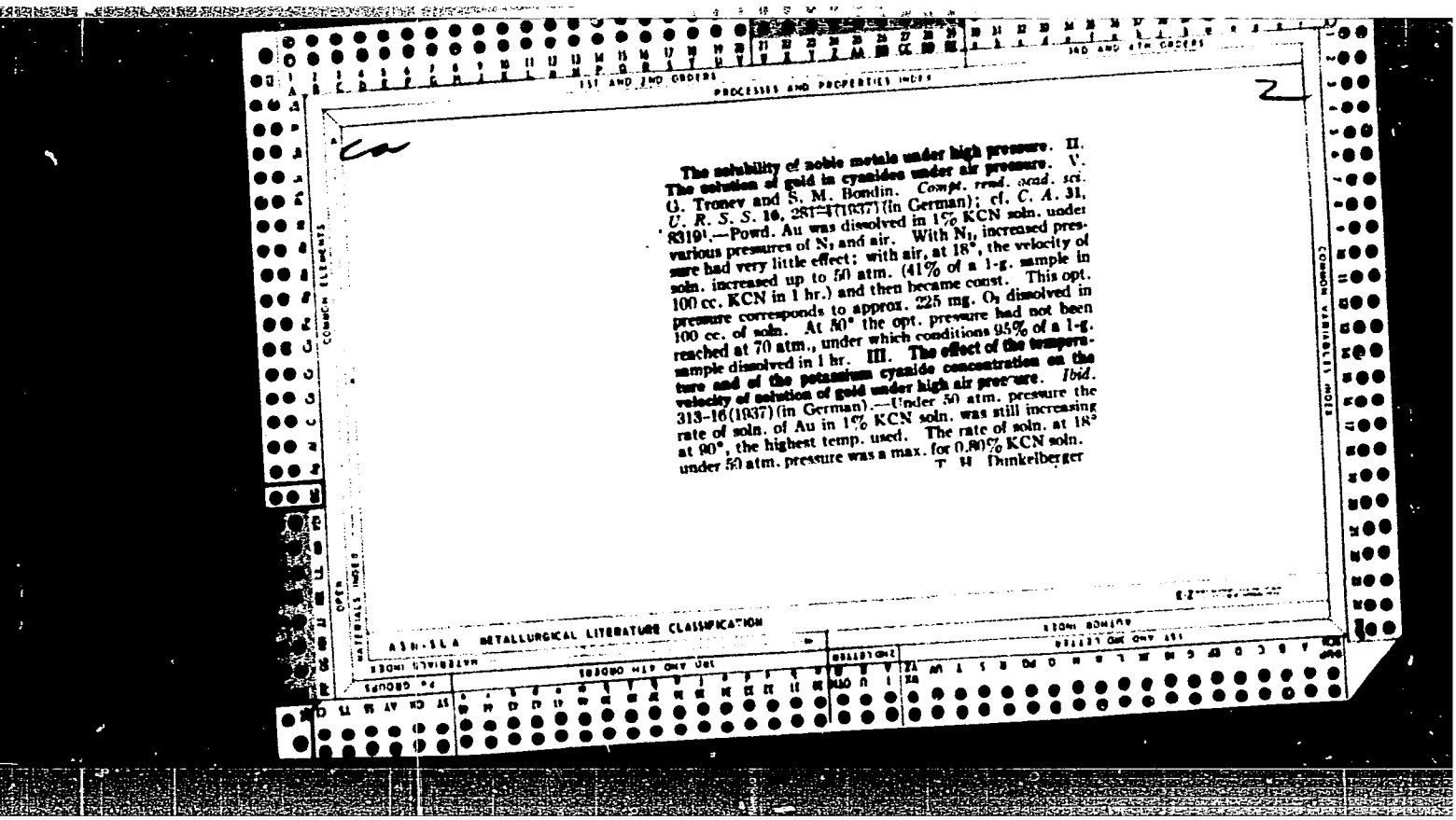
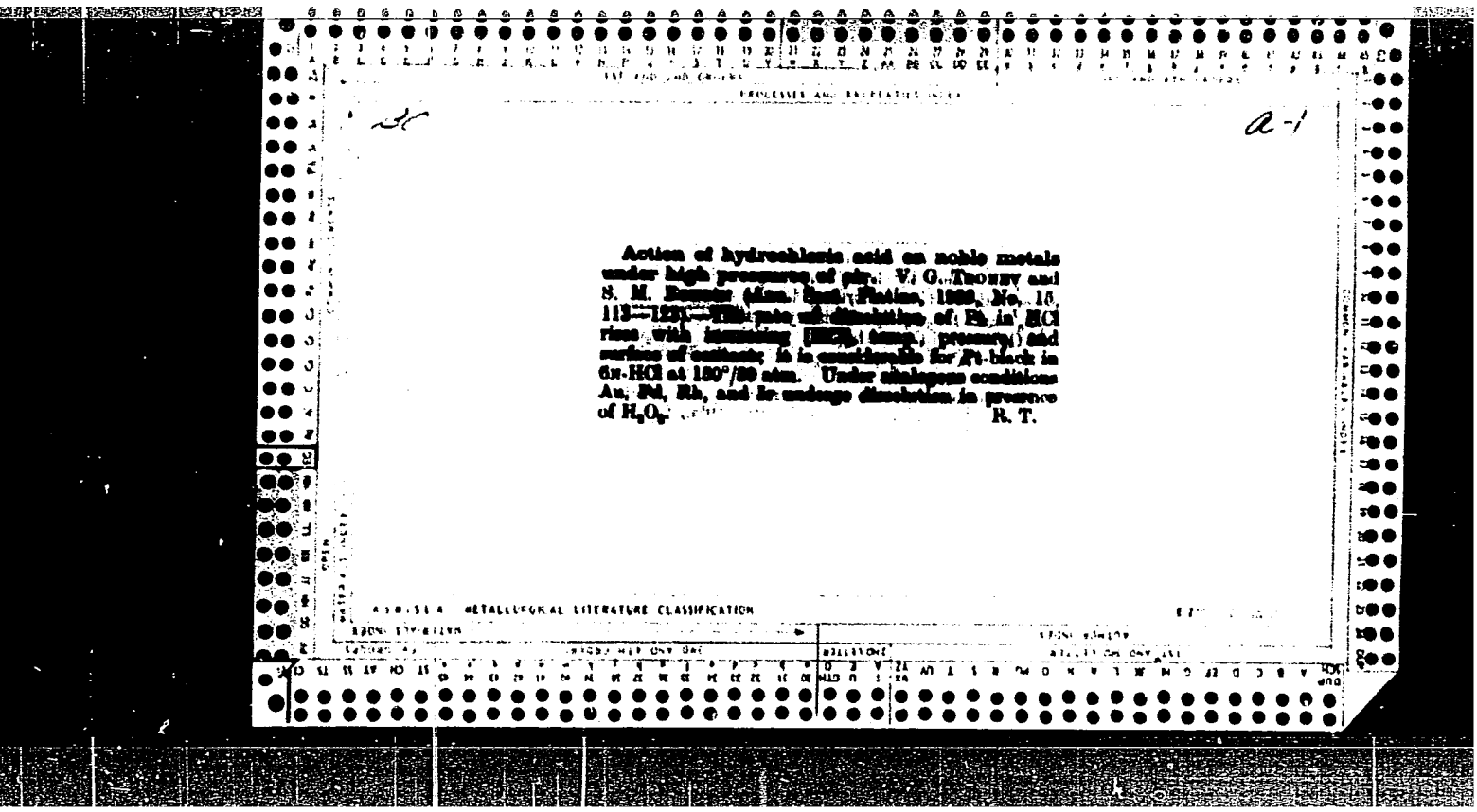
[Collection of programmed problems for a course in "Theory of automatic control"] Sbornik programmirovannykh zadach po kursu "Teoriia avtomaticheskogo upravleniia." Moskva, Mosk. energ. in-t. Pt.1. 1964. 183 p. (MIRA 18:5)

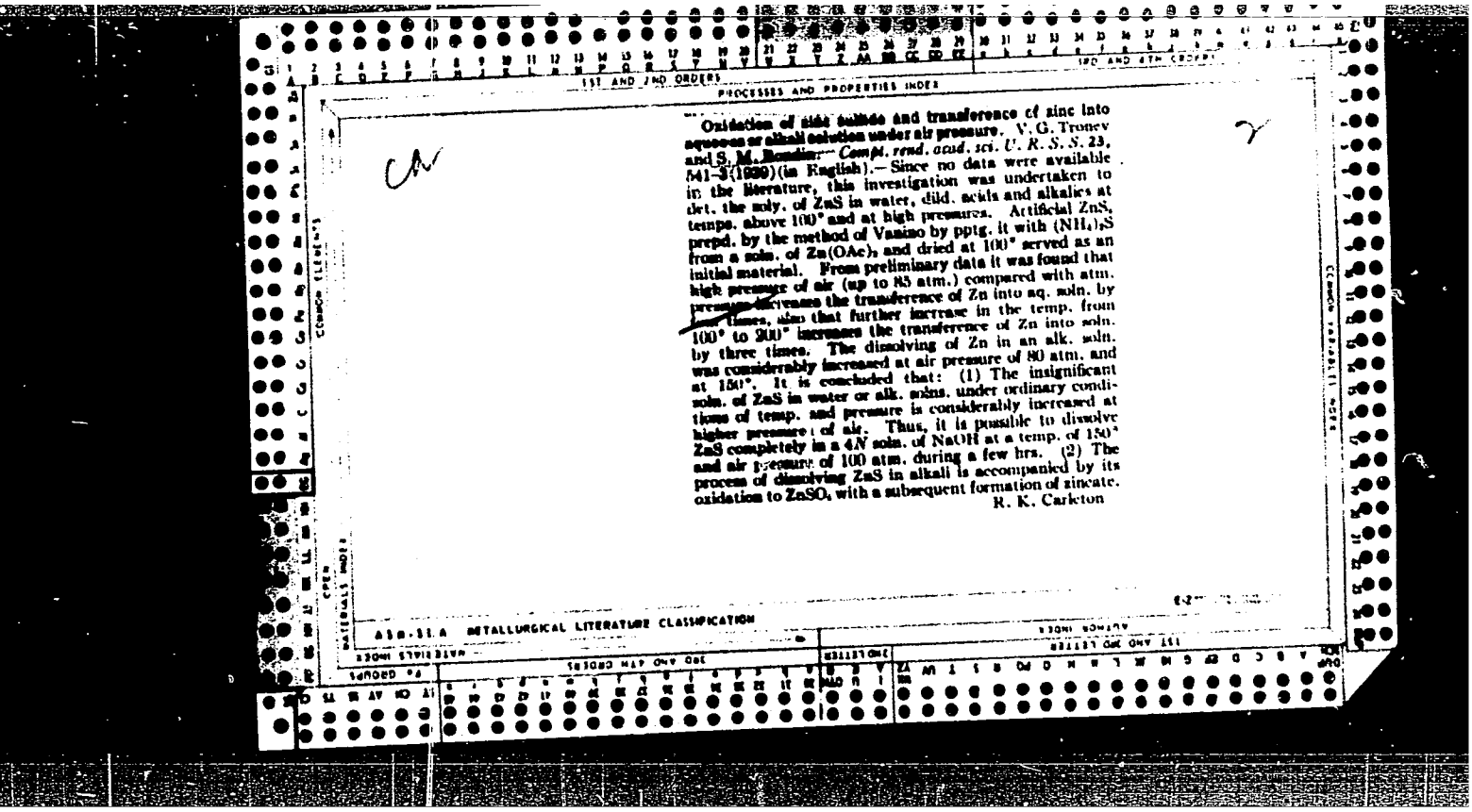


The solubility of noble metals under high pressure. II. The solution of gold in cyanides under air pressure. V. G. Tronev and S. M. Bondin. *Compt. rend. Acad. sci. U. R. S. S.* **16**, 287–91(1937)(in German); cf. *C. A.* **31**, 8319¹.—Powd. Au was dissolved in 1% KCN soln. under various pressures of N_2 and air. With N_2 increased pressure had very little effect; with air, at 18°, the velocity of soln. increased up to 50 atm. (41% of a 1-g. sample in 100 cc. KCN in 1 hr.) and then became const. This opt. pressure corresponds to approx. 225 mg. O_2 dissolved in 100 cc. of soln. At 80° the opt. pressure had not been reached at 70 atm., under which conditions 95% of a 1-g. sample dissolved in 1 hr. **III. The effect of the temperature and of the potassium cyanide concentration on the velocity of solution of gold under high air pressure.** *Ibid.* 313–16(1937)(in German).—Under 50 atm. pressure the rate of soln. of Au in 1% KCN soln. was still increasing at 90°, the highest temp. used. The rate of soln. at 18° under 50 atm. pressure was a max. for 0.80% KCN soln.

T. H. Dunkelberger



Action of hydrochloric acid on noble metals under high pressures of air. V. G. Thomsy and S. M. Berezin (Akad. Nauk, Platina, 1950, No. 16, 113—122).—The rate of dissolution of Pt in HCl rises with increasing [HCl], temp., pressure, and surface of contact; it is considerable for Pt-black in 6N-HCl at 180°/80 atm. Under analogous conditions Au, Pd, Rh, and Ir undergo dissolution in presence of H_2O_2. R. T.



PROCESSES AND PROPERTIES INDEX

Oxidation of zinc sulfide and transference of zinc into aqueous or alkali solution under air pressure. V. G. Troncv and S. M. Rountin.— *Compt. rend. acad. sci. U. R. S. S.* 23, 541–3 (1939)(in English).—Since no data were available in the literature, this investigation was undertaken to det. the sply. of ZnS in water, dild. acids and alkalies at temps. above 100° and at high pressures. Artificial ZnS, prepd. by the method of Vanino by pptg. it with $(NH_4)_2S$ from a soln. of $Zn(OAc)_2$ and dried at 100° served as an initial material. From preliminary data it was found that high pressure of air (up to 85 atm.) compared with atm. pressure increases the transference of Zn into aq. soln. by [illegible] times, also that further increase in the temp. from 100° to 200° increases the transference of Zn into soln. by three times. The dissolving of Zn in an alk. soln. was considerably increased at air pressure of 80 atm. and at 150°. It is concluded that: (1) The insignificant soln. of ZnS in water or alk. solns. under ordinary conditions of temp. and pressure is considerably increased at higher pressure of air. Thus, it is possible to dissolve ZnS completely in a 4*N* soln. of NaOH at a temp. of 150° and air pressure of 100 atm. during a few hrs. (2) The process of dissolving ZnS in alkali is accompanied by its oxidation to $ZnSO_4$ with a subsequent formation of zincate.

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A18-11 A METALLURGICAL LITERATURE CLASSIFICATION

C.A

Reduction of silver from nitrate and ammoniate solutions with hydrogen under pressure. V. G. Troitev and S. M. Bondin.—*Izvest. Sektora Platiny i Drugikh Blagorod. Metal., Inst. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 22, 187–93(1948).—The reduction of Ag^+ was studied at H pressure of 100 atm. and 25–200°. Under no condition was all of the Ag^+ reduced. Apparently, the reduced Ag redissolved in the HNO_3 which was formed. In addn. to HNO_3, there formed also nitrites, which decompd. into N oxides. All of the Ag^+ could be reduced if the N oxides were removed from the reaction area. From solns. of AgCl in NH_4OH, at temps. of 100° or higher and H pressure of 10 atm. or higher, within 1 hr. 80–100% of the Ag^+ was reduced to metal.

M. Hosch

C. A.

6

Reduction of gold from chloride and cyanide solutions with hydrogen under pressure. V. G. Tronev and S. M. Bondin. *Izvest. Sektora Platiny i Drugikh Blagorod. Metallov Fiz. Obshchei i Neorg. Khim., Akad. Nauk S.S.S.R.* No. 22, 191-201(1948).—Pptn. of Au from $HAuCl_4$ soln. was studied at 0-100° and up to 100 atm. of H. At 50 atm. of H, reduction of Au''' up to 60° was insignificant. Above that temp. reduction was rapid. Under 100 atm. of H at 25° the e.m.f. decreased slowly for 4 hrs. During this period very little Au was found in the reaction vessel, but the amt. of $AuCl_4^-$ increased. After 4 hrs. there was a sharp drop in the e.m.f. After this drop, almost all of the Au was pptd. At 75° the process was entirely similar except that the sharp drop in the e.m.f. occurred after 75-80 min. The pptn. of Au therefore occurred in 2 steps: first $AuCl_4^-$ was reduced to $AuCl_2^-$ and then $AuCl_2^-$ to metallic Au. From its cyanide soln. Au was completely reduced within 2 hrs. at 50 atm. of H and 175°. M. Hoch